



JUN 26 2008

## TRANSMITTAL FORM

*(to be used for all correspondence during pendency of  
filed application)*

<b>TRANSMITTAL FORM</b> <i>(to be used for all correspondence during pendency of filed application)</i>	Application Number	10/642,477	
	Filing Date	August 15, 2003	
	First Named Inventor	Masakazu Kawai	
	Group Art Unit Number	3736	
	Examiner Name	Jeffrey Gerben Hoekstra	
Total Number of Pages in This Submission	11*	Attorney Docket Number	20911-08172

**ENCLOSURES** *(check all that apply)*

<input checked="" type="checkbox"/> Fee Transmittal Form (in duplicate) <input checked="" type="checkbox"/> Check Enclosed	<input type="checkbox"/> Issue Fee Transmittal
<input checked="" type="checkbox"/> Return Receipt Postcard <input type="checkbox"/> Response to Notice to File Missing Parts <input type="checkbox"/> Assignment & Recordation Cover Sheet <input type="checkbox"/> Declaration <input type="checkbox"/> Power of Attorney <input type="checkbox"/> Application Data Sheet <input checked="" type="checkbox"/> Supplemental Information Disclosure Statement & PTO/SB/08A <input checked="" type="checkbox"/> Copies of IDS Cited Non-Patent References	<input type="checkbox"/> Letter to Chief Draftsperson <input type="checkbox"/> Formal Drawing(s): [ ] Sheet(s) of Figure(s) { } <input type="checkbox"/> Appeal Communication to Board of Appeals and Interférences <input type="checkbox"/> Appeal Communication to Group <i>(Appeal Notice, Brief, Reply Brief)</i> <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> After Allowance Communication to Group <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/> Request for Corrected Filing Receipt <input type="checkbox"/> Request for Correction of Recorded Assignment <input type="checkbox"/> Amendment/Response: [ ] Page(s) <input type="checkbox"/> After Final	
<input type="checkbox"/> Status Request <input type="checkbox"/> Revocation and Substitute Power of Attorney	

**REMARKS:** \*Page count does not include cited references.

**SIGNATURE OF ATTORNEY OR AGENT**

Signature: *Albert C. Smith*  
Attorney/Reg. No.: **Albert C. Smith, Reg. No. 20,355** Dated: **6/22/06**

**CERTIFICATE OF MAILING**

I hereby certify that this correspondence, including the enclosures identified above, is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below. If the Express Mail Mailing Number is filled in below, then this correspondence is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service pursuant to 37 CFR 1.10.

Signature:	<i>A.C. Smith</i>		
Typed or Printed Name:	Albert C. Smith	Dated:	6/22/06
Express Mail Mailing Number (optional):			





## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: Masakazu Kawai et al.  
APPLICATION NO.: 10/642,477  
FILING DATE: August 15, 2003  
TITLE: Method and Processor for Obtaining Moments and Torques in a  
Biped Walking System  
EXAMINER: Jeffrey Gerben Hoekstra  
GROUP ART UNIT: 3736  
ATTY. DKT. NO.: 20911-08172

### CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Mail Stop Amendment, Commissioner For Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date shown below:

Dated: 6/22/06 By: A. C. Smith  
Albert C. Smith, Reg. No.: 20,355

MAIL STOP AMENDMENT  
COMMISSIONER FOR PATENTS  
P.O. BOX 1450  
ALEXANDRIA, VA 22313-1450

### SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT Under 37 CFR §§ 1.56 and 1.97-98

SIR:

Pursuant to the provisions of 37 CFR §§ 1.56 and 1.97-98, enclosed herewith is modified form PTO/SB/08A listing references for consideration by the Examiner.

The filing of this Information Disclosure Statement shall not be construed as a representation regarding the completeness of the list of references, or that inclusion of a reference in this list is an admission that it is prior art or is pertinent to this application, or that a search has been made, or as an admission that the information listed is, or may be considered to be, material to patentability, or that no other material information exists, and shall not be construed as an admission against interest in any manner.

This Information Disclosure Statement is being filed:

- within three months of the filing date of the application, or date of entry into the national stage of an international application, or before the mailing date of a first office action on the merits, whichever event last occurred;
- before the mailing of a first official action after the filing of a request for continued examination (RCE) under 37 CFR § 1.114;

- after three months of the filing date of this national application or the date of entry of the national stage in an international application, or after the mailing date of the first official action on the merits, whichever event last occurred, but before the mailing date of the first to occur of either: (1) a final action under 37 CFR §1.113; or (2) an action that otherwise closes prosecution in the application, and:
  - attached hereto is the fee set forth under 37 CFR §1.17(p) for submission of this Information Disclosure Statement under 37 CFR. § 1.97(c); OR
  - Applicant certifies pursuant to 37 CFR § 1.97(e) that:
    - each item of information contained in this Information Disclosure Statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Statement; OR
    - no item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to the knowledge of the person signing this certification after making reasonable inquiry, no item of information contained in this Statement was known to any individual designated under 37 CFR § 1.56(c) more than three months prior to the filing of this Statement;
  - on or before the payment of the issue fee but after the mailing date of the first to occur of either: (1) a final action under 37 CFR § 1.113; (2) a notice of allowance under 37 CFR § 1.311; or (3) an action that otherwise closes prosecution in the application, and:
    - Applicant certifies pursuant to 37 CFR. § 1.97(e) that:
      - each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Statement;
      - no item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to the knowledge of the person signing this

certification after making reasonable inquiry, no item of information contained in this Statement was known to any individual designated under 37 CFR § 1.56(c) more than three months prior to the filing of this Statement; AND

- attached hereto is the fee set forth under 37 CFR § 1.17(p) for submission of this Information Disclosure Statement under 37 CFR § 1.97(d); OR
- after the payment of the issue fee. Applicant requests that the information contained in this Information Disclosure Statement be placed in the file according to 37 CFR § 1.97(i), although the information may not be considered by the USPTO.
- Enclosed is a copy of each listed reference that may be material to the examination of this application, and for which there may be a duty to disclose.
- This application relies, under 35 U.S.C. § 120, on the earlier filing date of prior application No. \_\_\_\_\_, filed on \_\_\_\_\_, and the references cited therein are hereby referenced, but are not required to be provided in this application under 37 CFR § 1.98(d).
- Copies of any foreign patent documents and non-patent literature cited herein are enclosed.
- Each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart application, and the communication was not received by any individual designated in 37 CFR § 1.56(c) more than thirty days prior to the filing of this Information Disclosure Statement. 37 CFR § 1.704(d).
- Applicant submits that no fee is required for the consideration of this Information Disclosure Statement.

Consideration of the listed references and favorable action are solicited.

Respectfully submitted,  
MASAKAZU KAWAI ET AL.

Dated: 6/22/06

By: Albert C. Smith  
Albert C. Smith, Reg. No.: 20,355  
Fenwick & West LLP  
Silicon Valley Center  
801 California Street  
Mountain View, CA 94041  
Tel.: (650) 335-7296  
Fax.: (650) 938-5200

INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT

JUN 26 2006

Sheet

1

of

5

## Complete if Known

Application No.	10/642,477
Filing Date	August 15, 2003
First Named Inventor	Masakazu Kawai
Art Unit	3736
Examiner Name	Jeffrey Gerben Hoekstra

Attorney Docket Number

20911-08172

## U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Document No.	Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document
	A1	US-2005/0104548 A1	05-19-2005	Takenaka et al.
	A2	US-2005/0102111 A1	05-12-2005	Dariush et al.
	A3	US-2004/0158175 A1	08-12-2004	Ikeuchi et al.
	A4	US-2004/0158175 A1	08-12-2004	Ikeuchi et al.
	A5	US-6,785,591 B1	08-31-2004	Hansson
	A6	US-6,750,866 B1	06-15-2004	Anderson III
	A7	US-2004/0107780 A1	06-10-2004	Kawai et al.
	A8	US 6,750,866 B1	06-15-2004	Anderson, Frank
	A9	US-2004/0102723 A1	05-27-2004	Horst
	A10	US-6,633,783 B1	10-14-2003	Dariush et al.
	A11	US-6,505,096	01-07-2003	Takenaka et al.
	A12	US-2003/0023415 A1	01-30-2003	Nakamura et al.
	A13	US-2003/0018283 A1	01-23-2003	Dariush
	A14	US-6,289,265	09-11-2001	Takenaka et al.
	A15	US-6,161,080	12-12-2000	Aouni-Ateshian et al.
	A16	US-5,982,389	11-09-1999	Guenter et al.
	A17	US-5,835,693	11-10-1998	Lynch et al.
	A18	US-5,136,227	08-04-1992	Nakano et al.
	A19	US-5,044,360	09-03-1991	Janke
	A20	US-4,834,200	05-30-1989	Kajita
	A21	US-4,786,847	11-22-1988	Daggett et al.
	A22	US-4,244,120	01-13-1981	Harris

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609.

Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Sheet

2

of

5

Complete if Known	
Application No.	10/642,477
Filing Date	August 15, 2003
First Named Inventor	Masakazu Kawai
Art Unit	3736
Examiner Name	Jeffrey Gerben Hoekstra
Attorney Docket Number	20911-08172

FOREIGN PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document Country Code <sup>3</sup> – Number <sup>4</sup> Kind Code <sup>5</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	T <sup>6</sup>
	B1	RU 2 107 328 C1	03-20-1998	Nurislamovich, Latypov (English Abstract only)	
	B2	WO 00/35346	06-22-2000	Stanford University	

OTHER REFERENCES – NON-PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T <sup>6</sup>
	C1	AGARWAL, S.K. et al., "Theory and Design of an Orthotic Device for Full or Partial Gravity-Balancing of a Human Leg During Motion," IEEE Transactions on Neural Systems and Rehabilitation Engineering, June 2004, Vol. 12, No. 2.	
	C2	AKHLAGHI, F. et al., "In-shoe Biaxial Shear Force Measurement: the Kent Shear System," Medical & Biological Engineering & Computing, July 1996, Vol. 34, pp. 315-317.	
	C3	ANDERSON, Frank C., "Static and Dynamic Optimization Solutions for Gait are Practically Equivalent", Journal of Biomechanics, 2001, Vol. 34, pp. 153-161	
	C4	ANDERSON, F. et al., "Dynamic Optimization of Human Walking," Journal of Biomechanical Engineering, October 2001, Vol. 123, pp. 381-390.	
	C5	ANDERSSEN, R. et al., "Numerical Differentiation Procedures for Non-Exact Data," Numerische Mathematik, 1974, Vol. 22, pp.157-182.	
	C6	ATKESON, C.G., "Learning Arm Kinematics and Dynamics", Annual Reviews, Inc., 1989, Vol. 12, pp. 157-183	
	C7	BARUH, H., Analytical Dynamics, Chapter 7, Rigid Body Kinematics, McGraw-Hill, 1999, pp. 355-371.	
	C8	BLAYA, J., "Force-Controllable Ankle Foot Orthosis (AFO) to Assist Drop Foot Gait," February 2003, web.mit.edu/jblaya/www/MSthesis_final.pdf	
	C9	BRONZINO, J.D., ed., "The Biomedical Engineering Handbook", IEEE Press, 2 <sup>nd</sup> Ed. Vol. 2, 2000, Chapter 142, pp. 1-17	
	C10	BURDEA, G. ET AL., "Virtual Reality Technology", 1994, pp. 33-37, John Wiley and Sons, Inc.	
	C11	BUSBY, H.R. et al., "Numerical Experiments With a New Differentiation Filter," Transactions of the ASME - Journal of Biomechanical Engineering, November 1985, Vol. 107, pp. 293-299.	
	C12	CHAO, E.Y. et al., "Application of Optimization Principles in Determining the Applied Moments in Human Leg Joints During Gait," J. Biomechanics, 1973, Vol. 6, pp. 497-510, Pergamon Press, Great Britain.	
	C13	CRAIG, J.J., "Nonlinear Control of Manipulators," Introduction to Robotics Mechanics and Control, 2 <sup>nd</sup> Ed., 1989, Chapter 10, PP. 333-361.	
	C14	CROWNINSHIELD, R.D. et al., "A Physiologically Based Criterion Of Muscle Force Prediction In Locomotion," Journal of	

Examiner Signature	Date Considered
--------------------	-----------------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609.

Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Sheet

3

of

5

Complete if Known	
Application No.	10/642,477
Filing Date	August 15, 2003
First Named Inventor	Masakazu Kawai
Art Unit	3736
Examiner Name	Jeffrey Gerben Hoekstra

Attorney Docket Number

20911-08172

## OTHER REFERENCES – NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T <sup>6</sup>
		<i>Biomechanics</i> , Vol. 14, No. 11, 1981, pp. 793-801.	
	C15	CULLUM, J., "Numerical Differentiation and Regularization," <i>SIAM J. Numer. Anal.</i> , June 1971, Vol. 8, No. 2, pp. 254-265.	
	C16	DARIUSH, B. et al., "Multi-Modal Analysis of Human Motion From External Measurements," <i>Transactions of the ASME</i> , June 2001, Vol. 123, pp. 272-278.	
	C17	DARIUSH, B., "A Novel Algorithm For Generating A Forward Dynamics Solution To The Traditional Inverse Dynamics Problem," In <i>4th World Congress of Biomechanics</i> , Calgary, Canada, 2002.	
	C18	DARIUSH, B., "A Forward Dynamics Solutions To Multi-Modal Inverse Dynamics Problems," In <i>International Society of Biomechanics, XI/Xth Congress</i> , Dunedin, NZ, 2003.	
	C19	DARIUSH, B., "A Well-Posed, Embedded Constraint Representation of Joint Moments From Kinesiological Measurements," <i>Journal of Biomechanical Engineering</i> , August 2000, Vol. 122, pp.437-445.	
	C20	DELP, S. et al., "A Computational Framework for Simulating and Analyzing Human and Animal Movement," <i>IEEE Computing in Science and Engineering</i> ; Vol. 2, No. 5, 2000, pp.46-55.	
	C21	DOHRMANN, C.R. et al., "Smoothing Noisy Data Using Dynamic Programming and Generalized Cross-Validation" <i>Transactions of the ASME – Journal of Biomechanical Engineering</i> , February 1988, Vol. 110, pp. 37-41.	
	C22	FLANAGAN, R.J., et al., "The Role of Internal Models in Motion Planning and Control: Evidence from Grip Force Adjustments During Movements of Hand-Held Loads", <i>The Journal of Neuroscience</i> , February 15, 1997, Vol. 17(4), pp. 1519-1528	
	C23	GIAKAS, G. et al., "A Comparison of Automatic Filtering Techniques Applied to Biomechanical Walking Data," <i>J. Biomechanics</i> 1997, Vol. 00, No. 00, 4 pages.	
	C24	GIAKAS, G. et al., "Optimal Digital Filtering Requires a Different Cut-Off Frequency Strategy for the Determination of the Higher Derivatives," <i>J. Biomechanics</i> , April 1997, Vol. 28, No. 00, 5 pages.	
	C25	GROOD, E.S. et al., "A Joint Coordinate System for the Clinical Description of Three Dimensional Motions: Application to the Knee," <i>Journal of Biomechanical Engineering</i> , 1983, pp. 136-144, No. 105.	
	C26	GRUBER, K., et al., "A Comparative Study of Impact Dynamics: Wobbling Mass Model Versus Rigid Body Models", <i>Journal of Biomechanics</i> , 31 (1998), pp. 439-444	
	C27	HATZE, H. "The Use of Optimally Regularized Fourier Series for Estimating Higher-Order Derivatives of Noisy Biomechanical Data," <i>J. Biomechanics</i> , 1981, Vol. 14, pp. 13-18.	
	C28	HAYASHIBARA, Y. et al., "Design of a Power Assist System with Consideration of Actuator's Maximum Torque," 4 <sup>th</sup> IEEE International Workshop on Robot and Human Communication, RO-MAN'95, Tokyo, July 5-7, 1995, pp. 379-384, [online] Retrieved from the Internet<URL: <a href="http://ieeexplore.ieee.org/xpl/abs_free.jsp?arNumber=531990">http://ieeexplore.ieee.org/xpl/abs_free.jsp?arNumber=531990</a> >	
	C29	HEMAMI, H., "A Feedback On-Off Model of Biped Dynamics", <i>IEEE Transactions on Systems, Man, and Cybernetics</i> , July 1980, Vol. SMC-10, No. 7, pp. 376-383	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609.

Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Sheet

4

of

5

Complete if Known	
Application No.	10/642,477
Filing Date	August 15, 2003
First Named Inventor	Masakazu Kawai
Art Unit	3736
Examiner Name	Jeffrey Gerben Hoekstra
Attorney Docket Number	20911-08172

OTHER REFERENCES – NON-PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T <sup>6</sup>
	C30	HEMAMI, H. et al., "Modeling And Control Of Constrained Dynamic Systems With Application To Biped Locomotion In The Frontal Plane," <i>IEEE Transactions on Automatic Control</i> , Vol. 4, No. 4, August 1979, pp. 526-535.	
	C31	HEMAMI, H., "A State Space Model for Interconnected Rigid Bodies," <i>IEEE Trans. on Automatic Control</i> , 1982, pp. 376-382, Vol. 27, no. 2.	
	C32	HOSEIN, R. et al., "A Study of In-shoe Plantar Shear in Normals," <i>Clinical Biomechanics</i> , 2000, Vol. 15, pp. 46-53.	
	C33	HUNGSPREUGS, P. et al., "Muscle Force Distribution Estimation Using Static Optimization Techniques", Technical Report – Honda R&D Americas	
	C4	JALICS, L. et al., "A Control Strategy for Terrain Adaptive Bipedal Locomotion," <i>Autonomous Robots</i> , 1997, pp. 243-257, Vol. 4.	
	C35	JEZERNK, S. et al., "Robotic Orthosis Lokomat: A Rehabilitation and Research Tool," <i>Neuromodulation</i> , 2003, pp. 108-115, Vol. 6, No. 2.	
	C36	KAWATO, M., "Adaption and Learning in Control of Voluntary Movement by the Central Nervous System", 1989, <i>Advanced Robotics</i> , Vol. 3, pp. 229-249	
	C37	KAWATO, M., et al., "The Cerebellum and VOR/OKR Learning Models", Elsevier Science Publishers Ltd., 1992, Vol. 15, No. 11, pp. 445-453	
	C38	KAWATO, M., "Internal Models for Motor Control and Trajectory Planning," <i>Current Opinion in Neurobiology</i> , 1999, pp. 718-727, No. 9.	
	C39	KHATIB, O., "A Unified Approach For Motion And Force Control Of Robot Manipulators: The Operational Space Formulation, <i>IEEE Journal of Robotics and Automation</i> , RA-3(1), 1987, pp. 43-53.	
	C40	KLEIN, C. A. et al., "Review Of Pseudoinverse Control For Use With Kinematically Redundant Manipulators, <i>IEEE Transactions on Systems, Man, and Cybernetics</i> , Vol. 13, No. 2, 1983, pp. 245-250.	
	C41	PARK, J.H. et al., "Biped Robot Walking Using Gravity-Compensated Inverted Pendulum Mode and Computed Torque Control, 1998 IEEE Conference on Robotics and Automation, May 16-20, 1998, pp. 2528-2533, Vol. 4, [online] Retrieved from the Internet<URL: <a href="http://ieeexplore.ieee.org/xpl/abs_free.jsp?arNumber=680985">http://ieeexplore.ieee.org/xpl/abs_free.jsp?arNumber=680985</a> >	
	C42	PIAZZA, S. et al., "Three-Dimensional Dynamic Simulation of Total Knee Replacement Motion During a Step-up Task," <i>Journal of Biomechanical Engineering</i> , Vol. 123, 2001, pp.599-606.	
	C43	RAHMAN, T. et al., "A Simple Technique to Passively Gravity-Balance Articulated Mechanisms," <i>Journal of Mechanical Design</i> , 1995, pp. 655-658, Vol. 117, No. 4.	
	C44	RUNGE, C.F. et al., "Estimating Net Joint Torques From Kinesiological Data Using Optimal Linear System Theory." <i>IEEE Transactions on Biomedical Engineering</i> , December 1995, Vol. 42, No. 12, pp. 1158-1164.	
	C45	SHADMEHR, R. et al., "Interference in Learning Internal Models of Inverse Dynamics in Humans," <i>Advances in Neural Information Processing Systems</i> , 1995, pp. 1117-1224, Chapter 7.	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609.

Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Sheet

5 of 5

## Complete if Known

Application No.	10/642,477
Filing Date	August 15, 2003
First Named Inventor	Masakazu Kawai
Art Unit	3736
Examiner Name	Jeffrey Gerben Hoekstra

Attorney Docket Number 20911-08172

## OTHER REFERENCES – NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T <sup>6</sup>
	C46	SHADMEHR, R., "Learning Virtual Equilibrium Trajectories for Control of a Robot Arm", <i>Neural Computation</i> , 1990, Vol. 2, pp. 436-446	
	C47	SIMONS, W. et al., "Differentiation of Human Motion Data Using Combined Spline and Least Squares Concepts," <i>Journal of Biomechanical Engineering, Transactions of the ASME</i> , August 1991, Vol. 113, pp. 348-351.	
	C48	THELEN, D. et al., "Generating Dynamic Simulations of Movement Using Computed Muscle Control," <i>Journal of Biomechanics</i> , 36, 2003, pp. 321-328.	
	C49	Transmittal of the International Search Report, PCT/US02/20829, December 12, 2002, 4 pages.	
	C50	"Unsupported Standing with Minimized Ankle Muscle Fatigue," [online] Retrieved from the Internet<URL: <a href="http://ieeexplore.ieee.org/iel5/10/29163/01315854.pdf">http://ieeexplore.ieee.org/iel5/10/29163/01315854.pdf</a> >	
	C51	VAUGHAN, C. L. et al., "Appendix B., Detailed Mathematics Used in GaitLab," <i>Dynamics of Human Gait</i> , Second Edition, Kiboho Publishers, Cape Town South Africa, 1999, pp. 83-106.	
	C52	VUKOBRAТОVIC, M. et al., <i>Scientific Fundamentals of Robotics 7: Biped Loco-motion</i> . Springer-Verlag, 1990, pp. 17-27.	
	C53	WINTER, D.A., "Kinetics: Forces and Moments of Force," <i>Biomechanics and Motor Control of Human Movement</i> , 2 <sup>nd</sup> Ed., New York, 1990, Chapter 4.	
	C54	WITTEMBERG, J., <i>Dynamics of Systems of Rigid Bodies</i> , 1977, B.G. Teubner Stuttgart, 1977, pp. 29-30.	
	C55	WOLPERT, D.M., et al., "Ocular Limit Cycles Induced by Delayed Retinal Feedback", <i>Experimental Brain Research</i> , 1993, Vol 96, pp. 173-180	
	C56	WOLTRING, H.J., "A Fortran Package for Generalized, Cross Validatory Spline Smoothing and Differentiation," <i>Adv. Eng. Software</i> , 1986, Vol. 8, No. 2, pp. 104-107.	
	C57	WOLTRING, H.J., "On Optimal Smoothing and Derivative Estimation From Noisy Displacement Data in Biomechanics," <i>Human Movement Science</i> , Vol. 4, 1985, pp. 229-245.	
	C58	Written Opinion, PCT/IB02/04311, February 20, 2003, 2 pages.	
	C59	ZAJAC, F.E., "Muscle and Tendon Properties, Models, Scaling, and Application to Biomechanics and Motor Control", 1989, Vol. 17, Issue 4, pp. 359-411	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609.

Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.